

The Nature Conservation Debate — The next round

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In the last edition of *Australian Zoologist* (Vol. 26, No. 1, March 1990) there were three important papers on conservation by authors with substantial experience in their area. One of the aims of these papers was to provoke further debate so, with the agreement of authors, I sought a publishable response from fellow specialists. Each respondent was advised that the original author would have the right of reply. In the pages that follow are the responses, the replies, and an editorial. The sequence of issues is the same as in the previous edition, i.e., bat conservation, by Les Hall; Wildlife conservation: state of the nation, by Harry Recher and; Conserving what? — The basis for reserve selection in New South Wales 1967-1989, by John Whitehouse.

A response to a commentary by Les Hall on Bat conservation in Australia

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It is difficult to imagine how any concerned bat biologist or environmentalist could disagree with the central arguments and facts on bat conservation presented by Les Hall in his recent review of the Australian scene.

We all know that there are problems with bat conservation nationally, regionally and globally. However, much of the recent and best documentation is either hidden in international committee discussion papers such as CITES or in Australian grant proposals which never go beyond the selection committees. The published articles available on this issue over the past few years are mostly written by journalists trying to assist in a general public awareness campaign about the diversity and value of Australian bats. At last Les Hall has provided us with a general context in which we can consider the problems of bat conservation raised by Lunney and others (1989, 1986, 1988) in a number of publications on forestry practices in south-east New South Wales and by Richards and Tidemann (1988). Hall has also provided a suite of priority actions to be taken to rectify the situation. These form a valuable starting point for developing a general strategy for Bat Conservation in Australia.

The major thrust of Hall's paper is that we should not be fooled into complacency by the data that shows no actual extinctions of bats in Australia in the last two hundred years. Instead we should be deeply concerned with the declining status of our bats — the rapid decline in distribution, abundance and health of some species and their habitats. We should actively pursue a change in general attitudes towards bats while also increasing our scientific understanding of their biology.

Throughout Hall's article flying foxes and microbats are referred to as a single conservation unit, thus avoiding some of the problems usually caused by designing conservation strategies around taxonomic instead of ecological units. However, Hall's arguments and list of priorities would benefit from an appropriate stratification of the bat fauna according to certain management or ecological themes. These strata might, for example, divide bats into those dependent of forests versus those dependent on caves for roost sites; urban dwelling bats versus those negatively affected by urbania; bats which are migratory versus those which are sedentary; bats with high daily mobility versus those which remain in a small area; social versus non-social bats; and those relying on patchy versus more continuous or regular food resources. Priorities for future research, legislation and the development of management protocols should all consider this kind of approach.

As Hall has pointed out, there are some common themes in the conservation problems faced by all bats. These are ignorance, prejudice and persecution. It is worth listing once again the common causes of problems for bats even though many of these were discussed by Hall.

In general bats suffer from:

- a) prejudice through folklore
- b) being an unknown fauna, usually ignored in surveys and being hard to separate into species
- c) having unmonitored status with regard to distribution, abundance and health
- d) having strong seasonality in life history patterns related to physiological changes, reproduction and distribution of food resources

- e) having basic resources which are typically patchy — both food and roosts
- f) being highly sensitive to toxins and more easily exposed due to opportunistic feeding habits and general manoeuvrability giving access to small fenced off areas.
- g) having benefits to most ecosystems which are poorly understood
- h) having habitat which is rapidly being destroyed or fragmented
- i) having strong competition with humans for use of resources such as caves, forests and fruit.

It is clear that if we are to address bat conservation in general then we should address the items on the list above, do some of the basic elements in a conservation strategy. But it is sobering to learn that in Australia such a conservation strategy is some time off and that the only strategy that now exists relates only to the eradication of bats in case of disease outbreak. As Les Hall has pointed out we have even tolerated one state, Queensland, having a free-for-all shotgun approach to bats. It is truly amazing that we have let one sector of the public and one uninformed state government sanction the vandalism of our ecological resources. Their actions threaten the long-term survival of our forests and other systems upon which even the vandals ultimately depend!

These are obvious questions that follow on from these revelations such as: how do we get governments, the public, the land managers and many of our fellow scientists to appreciate the importance of bats? How do we help them to learn from the ecological disasters and major crop losses caused through eradication of bats elsewhere in the world? How do we avoid the expensive recovery programmes of England, Europe and Israel to name a few? How do we convince all those concerned of the direct link between bats and forests through pollination, seed dispersal, nutrient recycling and insect control?

To set the ball in motion for bat conservation we need four things immediately: information, a strategy or action plan, resources and a public voice. The actions suggested by Les Hall at the end of his paper address some of these needs. I have taken the liberty of resorting and summarizing his 15 points into the four broad action categories mentioned above before adding my comments.

1. Information on bats.

- (a) Research
 - (i) bats and forest ecosystems
 - (ii) biological requirements of some key bat species

- (iii) studies of species in trouble (migratory and cave species)
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- (b) Information Management
 - (i) register of roosts, habitats and populations of bats
 - (ii) tissue bank
- (c) Monitoring of representative or key bat species
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2. Strategy

- (a) establishment of co-ordinator of strategy development
- (b) legislative changes
- (c) development of minimum management protocols for bats to be used generally
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3. Resources (no mention by L. Hall)

4. Public Voice

- (a) develop a campaign for public education and support

To this list of priorities I would add (as indicated by * above):

1. (a) (iv) research on elucidating past patterns of extinction to make predictions and to help separate natural from human-assisted changes in species status
1. (d) Review current status of all Australian bats on the basis of:

- (i) biological or evolutionary uniqueness
- (ii) changes in distribution
- (iii) changes in abundance
- (iv) degree or likelihood of threat to habitat
- (v) predictions of affect of global change
- (vi) state of knowledge of species biology

2. (d) Set up working groups of two kinds
 - (i) a group of bat specialists charged with preparation of initial priorities in bat conservation in Australia
 - (ii) teams of specialist scientists, together with environmental practitioners, policy makers and industrial or business groups charged with the preparation of a feasible action plan
3. Establish a three-tiered resource base through government, general public and the corporate sector for:
 - (a) general planning and co-ordination
 - (b) research
 - (c) implementation of the action plan

The success of the next step in Australian bat conservation clearly relies on the understanding that we need to simultaneously acquire information, a strategy, long-term resource base and a public voice. The responsibility for co-ordination and initial resource base should rest with Australian National Parks and Wildlife Service (ANPWS) while the planning should be carried out by the existing or expanded Bat Specialist Group endorsed by IUCN and supported by ANPWS or the Endangered Species Advisory Committee (ESAC). The precedent set by the meeting of Ghost Bat Specialists in February 1990 hosted by ANPWS should be followed through and the momentum maintained in the development of a general Bat Action Plan for Australia.

While dealing with the setting of research priorities, policies and plans "behind the scenes" we should also be concerned with the development of highly visible public programmes which attract the average person's imagination and support for bats. The Gordon Bat Colony and the activities of the group who saved it are cases in point. The success of the action group was the result of a local campaign to draw on sympathy for local bat residence and turn fear to respect.

Concurrent with public issues we should also be prepared to pursue industrial partnerships using "sure-win" propositions to set the scene for long-term co-operative conservation strategies. The Ghost Bat Colony of Pine

Creek in the Northern Territory is such an example. The conservation of this critical maternity site has benefits for the mining company, the policy makers and the bats. The key to a win is early planning with all parties involved. In our eagerness to gather scientific information about bats and to change general attitudes we should not forget the power of business or the local community in conservation.

Les Hall has done well to remind us of the need to get moving at any level if we wish to conserve the Australian bats before it becomes critical.

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Response to Les Hall

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In "The Australian Zoologist" volume 26 number 1, Les Hall discussed the status of bat conservation in Australia and listed 15 suggestions for specific projects related to bat conservation and research. I think they were very good suggestions. About half of them require or would be facilitated by the establishment of a national centre to serve as a register of bats and bat studies and as a base for a national co-ordinator. Les Hall stopped short of proposing answers to the fundamental questions of "where should such a centre be located" and "who should run it". The obvious answers are "Canberra" and the "Australian National Parks and Wildlife Service". In reality I think it highly unlikely that the federal or any of the state wildlife authorities will establish such a centre. Firstly for political reasons — not political in the Labor/Liberal sense, but in the sense that extremely vocal lobbies for specific issues (such as "saving" kangaroos) will continue to set the agenda and influence the expenditure of all government services. Secondly due to lack of

resources — all expenditures are likely to decrease in the foreseeable future on "research" activities by national parks and wildlife services. For example, the best field study on bats at the moment is the study of Grey-headed Flying-foxes being carried out by Peggy Eby at the NSW National Parks and Wildlife Service. But that project exists on short-term, external funding which is unlikely to continue beyond 1990. And even those limited resources are compromised by the need to divert personnel to meet the immediate problems posed by the outcries of some fruit growers and "concerned citizens" claiming economic disaster due to the protection of flying-foxes by current New South Wales legislation.

More and more, with decreasing resources, the fauna authorities are going to be diverted to deal with what are seen as immediate problems, particularly those with economic overtones. The federal service will no doubt